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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,611	10/03/2003	David K. Puterbaugh	06011/38140	9430

4743 7590 08/24/2005

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EXAMINER	
PRESTON, ERIK D	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 10/678,611	**Applicant(s)** PUTERBAUGH ET AL.
	Examiner Erik D. Preston	**Art Unit** 2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *33-67* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33-67* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/8/05*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 67 is rejected under 35 U.S.C. 102(b) as being anticipated by Zimmerman (US 3638055 cited in a previous office action). Zimmerman teaches an electric motor comprising: A motor casing (Fig. 1, #7) having an inner casing surface; a stator assembly (Fig. 1, #6) disposed in the interior of the motor casing, the stator assembly having a core having an outer core surface, the inner casing surface and the outer core surface defining a gap therebetween; and a cured, thermally conductive coating material (Fig. 6, #9) which substantially covers the stator, assembly, physically contacts the interior of the motor casing, and substantially fills the gap, thereby thermally connecting the stator assembly to the motor casing.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 45,55 & 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over McAvena (US 5095612) in view of Zimmerman (US 3638055). McAvena teaches an electric motor (Fig. 1, #10) comprising: A stator assembly (Fig. 3, #44) including a generally cylindrical core defining a stator bore and wire windings (Fig. 3, #41) housed in the core and extending outward from the ends of the core, the core having an outer core surface; a rotor shaft assembly (Fig. 3, #12) disposed in the stator bore of the stator assembly and including a generally cylindrical rotor affixed to a shaft extending along the central axis, the shaft including a first, operative end extending outward from the casing and a second end; a generally open–ended motor casing (Fig. 1, #11) adapted to house the stator assembly in an interior thereof, the casing having an inner casing surface, the casing having an inner casing surface, the inner casing surface and the outer core surface defining a gap therebetween; a first end bell and a second end bell (Fig. 3, #25 & 26) adapted to close the open ends of the motor casing and substantially seal the interior of the motor casing from an exterior thereof, the first end bell and the second end bell including bearing assemblies (Fig. 3, #64) for rotationally supporting the rotor shaft assembly; a conduit box (Fig. 4, #14) mounted on the exterior of the casing, the conduit box having electrical access to the interior of the casing through an electrical inlet (Fig 4. #22) disposed on the exterior of the casing, said conduit box being mounted to an exterior of the casing such that the conduit inlet is substantially aligned with the electrical inlet, wherein a plurality of electrical wires connected to the stator assembly (Fig. 4, #21) pass from the interior of the casing through the electrical inlet into the conduit box; and a thermally-conductive (the material used to coat the windings of the stator assembly will inherently conduct heat from the windings as said windings heat up during operation of the motor) coating material (Fig. 6, #55) adapted to encapsulate the wire windings of the stator assembly; wherein the cured coating material physically contacts both the stator assembly and the interior of the motor casing (best seen in Figure 4), thereby transferring heat from the motor windings to the motor casing when the motor is running (heat in the coating will inherently be transferred to the housing at the point where the coating and the housing touch), and a portion of the cured material extends from the interior of the casing into the conduit box through the electrical inlet to encapsulate the electrical wires and cover a portion of the electrical wires extending into the conduit box (as seen in Fig. 4), but it does not teach the gap being substantially filled by the thermally-conductive coating. However, Zimmerman teaches a gap between an inner casing surface (Fig. 1, #7) and an outer core (Fig. 1, #6) surface said gap being substantially filled with a thermally-conductive coating material (Fig. 1, #9). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the thermally-conductive coating of McAvena in view of the thermally-conductive coating as taught by Zimmerman because it provides a means to seal the interior of an electrical housing in a simple low cost manner (Col. 1, Lines 56 & 57).

Claims 33,34,37,40,44,47,50,54,59 & 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over McAvena (US 509612) in view of Zimmerman (US 3638055) in view of Nakamura et al. (US 5490319).

With respect to claims 33,34,37,47 & 56, McAvena teaches an electric motor (Fig. 1, #10) comprising: A motor casing (Fig. 1, #11) being generally cylindrical and having open ends, the motor casing having an inner casing surface; a stator assembly (Fig. 3, #44) disposed in an interior of the casing, the stator assembly having a generally cylindrical core defining an internal bore and an outer core surface, the inner casing surface and the outer core surface defining a gap therebetween; a rotor shaft (Fig. 3, #12) assembly disposed in the internal bore of the stator assembly and including a shaft; a pair of casing closures (Fig. 3, #25 & 26) sized and adapted to close the open ends of the casing, the casing closures including bearing assemblies (Fig. 3, #64) adapted to support the shaft and substantially seal the interior of the motor casing; and a cured, thermally-conductive coating material formed from a curable liquid resin that is impervious to moisture which both covers the stator assembly and physically contacts the interior of the motor casing, thereby thermally connecting the stator to the motor casing; an electrical inlet disposed in the casing (Fig. 4, #22); a conduit box (Fig. 4, #14) having a conduit inlet (Fig. 4, #18), the conduit box mounted to an exterior of the casing such that the conduit inlet is substantially aligned with the electrical inlet; a plurality of electrical wires (Fig. 4, #21) adapted to provide power to the stator assembly, the electrical wires passing from the interior of the casing into the conduit box through the electrical inlet; wherein the coating material extends from the interior of the casing through the electrical inlet and the conduit inlet to encapsulate the electrical wires and cover a bottom portion of the electrical wires extending into the conduit box (as seen in Fig. 4), but McAvena does not teach that the coating material substantially covers the stator assembly, that it includes a powdered ceramic material, or that it substantially fills the gap. However, Nakamura teaches a stator assembly (Fig. 1, #9) that is substantially covered by a coating material (Col. 6, Line 65-Col. 7, Line 2) that includes powdered zircon, and Zimmerman teaches a cured, thermally-conductive coating material which substantially fills a gap. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the motor of McAvena in view of the coating as taught by Nakamura because the coating of Nakamura is a good electrical insulator, permits good heat conduction, and experiences small thermal expansion thus ensuring high reliability (Nakamura, Abstract); and it would also have been obvious to modify the thermally-conductive coating of McAvena in view of the thermally-conductive coating as taught by Zimmerman because it provides a means to seal the interior of an electrical housing in a simple low cost manner (Col. 1, Lines 56 & 57).

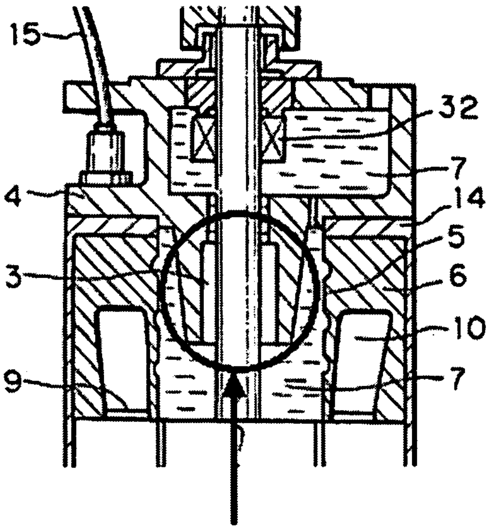
With respect to claims 40,50 & 59, McAvena in view of Zimmerman in view of Nakamura teaches the electric motor of claim 33, McAvena teaches the electric motors of claims 45 & 55, and Nakamura teaches the motor casing being made of a pressed metal, but it does not teach the metal being specifically stainless steel. However, stainless steel is a material that is very well know in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the motor housing of McAvena out of stainless steel because it is one of the cheapest and most widely available of all metals.

With respect to claims 44 & 54, McAvena in view of Zimmerman in view of Nakamura teaches the electric motor of claim 33, McAvena teaches the electric motor of claim 45, and Nakamura teaches an operative end of the shaft (Fig. 1, #1) extends outside the motor casing through the first end bell (Fig. 1, #4), and wherein the non-operative end of the shaft is enclosed in the motor casing by being disposed in a correspondingly sized slot in a second end bell (Fig. 1, #37).

Claims 35 & 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over McAvena (US 5095612) in view of Zimmerman (US 3638055) in view of Nakamura et al.(US 5490319) further in view of Williams et al. (US 2002/0117919). McAvena in view of Zimmerman in view of Nakamura teaches the electric motor of claim 33, and McAvena in view of Zimmerman teaches the electric motor of claim 55, but they don't teach a transition box having an arc-shaped face for contacting the motor casing disposed between the motor casing and conduit box. However, Williams teaches a transition box (Fig. 1, #24) having an arc-shaped face for contacting a motor casing (Fig. 1, #12) disposed between the motor casing and a conduit box (Fig. 1, #36). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the motor of McAvena in view of the transition box as taught by Williams because the transition box is firmly affixed to the housing of the motor so that it cannot be shaken loose by excessive motor vibrations, and it is also is cheaper than traditional attachment methods (Williams, Paragraph 5).

Claims 36 & 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over McAvena (US 5095612) in view of Zimmerman (US 3638055) in view of Nakamura et al. (US 5490319) further in view of Schnyder (US 4381464). McAvena in view of Zimmerman in view of Nakamura teaches the electric motor of claim 33 and McAvena in view of Zimmerman teaches the electric motor of claim 45, but they do not teach a heat shrink tube having an adhesive lining adapted to seal ends of the electrical wires extending into the conduit box. However, Schnyder teaches a heat shrink tube (Fig. 5, #43) having an adhesive lining (Fig. 5, #47) adapted to seal the ends of the electrical wires. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the electric motor of McAvena, in view of the tubing as taught by Schnyder because the tubing includes non-moisture absorbing insulation which effectively seals moisture out of the stator coil electrical connections (Schnyder, Abstract).

Claims 38,39,48,49,57,58,65 & 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over McAvena (US 5095612) in view of Zimmerman (US 3638055) in view of Nakamura et al. (US 5490319) further in view of Iketani (US 2005/0062233). McAvena in view of Zimmerman in view of Nakamura teaches the electric motor of claim 33, McAvena in view of Zimmerman teaches the electric motor of claims 45 & 55, McAvena teaches the bearing assemblies comprising a sealed ball bearing (Fig. 3, #64) and a shaft lip seal (Fig. 3, #66); and Nakamura teaches a bearing retainer ring (see figure below), but they do not teach a shaft washer ring, a one-way check seal, or a slinger disposed on an outer face of one of the bearing assemblies. However, Iketani teaches a slinger (Fig. 1, #14) and an outer seal (Fig. 1, #23) that inherently operates as a one-way check seal (any pressure that builds up in the chamber between this seal and the lip seal (Fig. 1, #22) will be allowed to escape from the chamber by way of the outer seal), and shaft washers are very well know in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the electric motor of McAvena in view of the bearing assembly as taught by Iketani because it keeps foreign matter from entering the bearing unit of the motor (Iketani, Paragraph 46), and to modify the shaft of McAvena with a shaft washer because it would provide a means for tightening the connection of the bearing assembly with the end bell.



Bearing Retainer Ring

Claims 41-43,51-53 & 60-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over McAvena (US 5095612) in view of Zimmerman (US 3638055) in view of Nakamura et al.(US 5490319) further in view of Mashiko et al. (EP 1363069 supplied by the applicant). McAvena in view of Zimmerman in view of Nakamura teaches the electric motor of claim 33, McAvena in view of Zimmerman teaches the electric motor of claims 45 & 55, and McAvena teaches an end closure having a vent (Fig. 3, #67), but doesn't teach the vent comprising a breather plug. Mashiko teaches a breather plug (Fig. 1, #1) made of fluororesins (Paragraph 33) including polytetraflouroethylene. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the electric motor of McAvena in view of the breather plug as taught by Mashiko because it prevents water or dust from entering the inside of a housing while discharging gas generated in the housing and relaxes the change of pressure inside the housing caused by a change of temperature (Mashiko, Paragraph 4).

Response to Arguments

Applicant's arguments with respect to claims 33,45 & 55 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6867518.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is 571-272-8393. The examiner can normally be reached on Monday through Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

08/19/2005

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